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ABSTRACT

The three purposes for which this study was conducted involved collection and summarization of otherwise unavailable data on student characteristics and aspirations, editing and summarization of reading test data collected over the past six years, and testing of the feasibility and utility of a computerized master file combining student data derived from numerous sources. A Socio-Cultural Survey instrument was designed to obtain data on student backgrounds and aspirations and was administered during student registration. These survey data were combined with statistical analyses of reading test data, and were compiled with other extant student data to form a resultant master file which was tested for utility through employment of various exercises. In order to maintain the master file on an on-going basis, data obtained for this study by survey will be collected in the future by counselors during the orientation process, using a form providing capability for gathering necessary master file data. This study provided the technology and experience necessary to provide a data bank for analysis and an on-going mechanism for assessing institutional outcomes and effectiveness. Appended are the survey instrument, student Orientation Inventory forms, and summarized reading test data used in the compilation of a student master file. (JDS)

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MASTER FILE FEASIBILITY STUDY

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INTRODUCTION

The purpose of this study was threefold. First, it involved an attempt to obtain descriptive data about the college's clientele that are not otherwise available, conduct a descriptive analyses of existing test data, and create and test a master file of relevant student data.

A student provides the college with a good deal of data about himself from the time he applies for admission to the time he petitions for a degree, drops, or ceases to continue his education for some other reason. These data are gathered on application forms, requests for diagnostic testing, petitions for graduation, and the like. For the most part, these data are innocuous and most students are not hesitant to provide the required information. As the result we have easy access to such things as the student's sex, whether he is part-time or full-time, and whether he resides in the immediate attendance area or not. However, frequently the college needs information of a more revealing nature. Students are often reluctant to divulge this type of information. This is because such queries involve attributes like socio-economic status and cultural heritage. These kinds of data are likely to be viewed by the student as "none of the college's business." However, the data are necessary for various reasons. Often, agencies in reviewing applications for extramural funding desire to know a good deal about the attributes of a target population that a proposed program is designed to serve. Teachers and college staff members all need to know what the learner characteristics of the potential students are in order to provide coherent development efforts. Other logical uses of the information are to provide orientation to new staff members and students entering the college and to provide baseline data for specific developmental purposes.

Without a clear understanding of the characteristics and attributes of the student body, much of the educational program is likely to be irrelevant.

The second purpose of the study was to organize and perform descriptive analyses of test data gathered from the student body since 1970. During orientation, students take a reading test and an algebra or math placement test. As some of the analyses conducted as part of this study demonstrated, the reading test is the most effective of the three in predicting academic success. In order to use these data as part of the master file, it was decided to perform a comprehensive edit and generate measures of central tendency and other descriptive analyses of these data.

The third and most important purpose of the study was to test a prototype methodology for developing master files for a student body simulation model at the institutional level. Such master files are necessary in order to aggregate various sources of data about an individual into a single analytical cell for cross-tabular analyses and organizational projections. Success in attaining such a capability would allow greater manipulation of such variables heretofore unassociated regarding the student and his performance. While no such file would likely ever be comprehensive, the creation of a file sample would allow the institution to explore various types of analysis. All three objectives of the study were realized.

SOCIO-CULTURAL SURVEY

Instrument Development

As previously mentioned, one of the purposes of the study was to gather certain demographic data and information regarding individual aspirations. This involved the necessity for developing an instrument. It was considered important to keep the instrument brief in order to improve the possibility of a good return. To avoid as many coding problems as possible, it was decided to make the items "forced focus" in nature. A considerable range of options was provided in order to insure a good degree of precision.

Eight areas of information were queried. These included:

1. rationale for attendance
2. areas of academic or vocational concentration
3. ethnic background of student
4. father's occupation
5. father's level of educational attainment
6. family income level
7. nature of social unit in which respondent resided
8. attitude toward a community college degree

A copy of the instrument is provided in Appendix A. The rationale for each item and the structure of the possible response options were developed with a good deal of care.

With regards to the rationale for attending college, the research staff sought to determine what the specific educational objective of the respondent was. People attend community colleges for a number of reasons. Some see the two-year college as an inexpensive and expedient method of working towards a baccalaureate degree.

Others see the experience as an opportunity to gain vocational skills for immediate employment. In-service training and simple personal satisfaction constitute other objectives. Clearly, the outcome measures designed to gauge institutional effectiveness for each of these groups cannot be the same. Therefore, in order to measure organizational effectiveness, it is necessary to know the particular expectations of various groups of students.

One of the traditional ways of assessing a student population is by academic major or program. Such data are particularly useful for validating a sample. These data were obtained for this purpose as part of the survey exercise.

Leeward Community College has a particularly pluralist student body. Numerous ethnic groups are represented. We know that cultural traits often affect the manner in which a person or group prefers to learn. Agencies dealing with extramural funding frequently want information about the composition of the student body.

Twelve categories were used for this study. The categories selected were taken partly from the taxonomy used by the Hawaii State Department of Planning and Economic Development and partly from that used by the Hawaii State Department of Health. Between the two, all of the ethnic backgrounds historically associated with Hawaii were accounted for. The resulting taxonomy permits direct comparisons with data collected by the U.S. Bureau of the Census.

In many other ethnic surveys, a mixed category has been used. In such cases, the agencies have utilized arbitrary formulas to assign persons having no obvious classification among better established categories. Such assignments make the meaningful use of cross-tabulation relative to this criterion impossible. The arrangement of categories in this survey was designed to avoid these problems.

One of the two criteria most frequently used by social scientists to assign social status is father's occupation. Codification of occupation is most difficult when open-ended queries are used. This is due to the fact that there are approximately 500 recognized occupations. The intent was to dichotomize the respondents into either a "blue collar" or "white collar" classification. Fifteen broad categories were used. These categories are those used by the U.S. Department of Commerce, the U.S. Bureau of the Census, and the Hawaii State Department of Labor and Industrial Relations. Occupations listed in options 1 through 5 were coded as "white collar." Options 6 through 15 were coded "blue collar" (refer to Appendix A).

The second criterion usually used to describe social status, when data are so aggregated, involves "father's education." The eight groupings used by the U.S. Bureau of the Census were employed. The data were dichotomized. The resulting two groups consisted of respondents having fathers with "some college" education and those having fathers that had "no college" education.

Family income is another commonly used socio-economic indicator. The categories employed represented a truncated version of that used by the U.S. Bureau of the Census. The categories were truncated because of the preponderance of middle income family units in Hawaii. Extreme poverty and extreme affluence are known to be largely unrepresented in the study population.

The family situation in which the student resides was also requested. Family grouping information is important in qualifying the relative importance of family income. It is also an important characteristic which affects the motivation and life style of the student.

The last item on the questionnaire solicited the student's interest in obtaining a community college degree. A relatively small percent of the students at

Leeward Community College bother to apply for a degree. This is true for vocational students as well as liberal arts transfers. Only 7% of the student body received degrees in 1975. Some people have hypothesized that students may not feel such degrees are useful. If this is true, data on degrees awarded represents an inappropriate indicator of organizational effectiveness. The student was asked to report the relative importance of such a degree to him.

Administration of Survey Form

It was decided that the best point at which to gather the particular information desired was during the registration process. Considerable care was taken not to complicate the registration process itself as this would create undesirable confusion and student resentment. Students, in competing for access to scarce courses at prime hours, are often anxious and inclined to be nonreceptive to queries for additional information during registration. This is particularly so if they do not see that such a request is an inherent part of the registration process. It was decided that the point to administer the survey was immediately prior to the point at which the students pay their fees. Students by this time have secured their class cards, and there is usually a considerable delay before they can make their payments and leave the building. It was hoped that the questionnaire might also provide a diversion of sorts.

The registration process involved two evening and three day sessions. All staff members of the Office of Institutional Research participated. Students were told that the questionnaire was optional but were urged to complete it. Questionnaires were distributed in the fee line where the column began to form and were collected at the point at which payments were made.

Given the rather personal nature of the questionnaire, the cooperation on the part

of the participants was quite good. More than half of the student population completed the questionnaire. Some declined to report their social security number. In no instance was the student urged to provide information which he was not willing or inclined to do.

Findings Emanating from the Student Survey Descriptive Data

The respondents were asked as to the particular reason for their college attendance. Slightly over one third stated that they were preparing for a bachelor's degree. (Refer to Table 1). This was the most frequently marked response option. Almost 20% claimed they were attending for reasons of a personal nature. Surprisingly, only 14.5% claimed they were attending for the purpose of "occupational preparation." Professional improvement was mentioned least. These data were corroborated by similar findings gleaned from the "student flow study."

The registrants were asked what their intended major field of study was or would be. It was this item which revealed that our sample was somewhat atypical compared to the student population as a whole. Only 51.9% stated they were liberal arts major of one sort or the other. The Student Information System files revealed that the actual proportion registering with such a major was 68.5%. (Refer to Table 3.)

Almost one third of those that participated stated their major was "business education." (Refer to Table 2). Of the liberal arts majors, the division generating the greatest interest was that of the Arts and Humanities. The Social Sciences were second with 16.6% of the study population. The Language Arts division, which is the largest in the college, attracted only 4.4% of the sample. Vocational-Technical majors accounted for about 13% of the respondents relative to program preference.

TABLE 1

SUMMARY OF RESPONDENTS
BY SPECIFIC EDUCATIONAL
OBJECTIVE

Objective	N	%
Not Given	95	3.1
Personal Interest	590	19.3
Professional Improvement	328	10.7
Occupational Preparation	445	14.5
AA or AS Degree	530	17.3
Preparation for BA	1,046	34.2
Other	28	0.9
Total	3,062	100.0

Source: LCC Office of Institutional Research

TABLE 2

SUMMARY OF RESPONDENTS
BY MAJOR FIELD OF STUDY

Program Type	N	%
Not Given	156	5.1
Arts and Humanities	597	19.5
Business Education	927	30.3
Language Arts	136	4.4
Mathematics and Natural Sciences	349	11.4
Social Sciences	507	16.6
Vocational-Technical	390	12.7
Total	3,062	100.0

Source: LCC Office of Institutional Research

TABLE 3

ACTUAL STUDENT BODY
PROFILE BY MAJOR
FIELD OF STUDY

Program Type	N	%
Liberal Arts	4,388	68.5
Business Education	1,046	16.3
Vocational-Technical	976	15.2
Total	6,410	100.0

Source: MSO SIS file for Spring 1976

As previously mentioned, one of the things that the Office of Institutional Research is most frequently asked is the ethnic and cultural make-up of the student body. Data relative to this characteristic was gathered in 1970, in 1972, and in the fall of 1975 (refer to Table 5). The data gathered as part of this study was similar to the most recent information gathered by the University Systems Office. No one group represented a majority. However, the largest plurality was Japanese with 30.0% of the total (refer to Table 4). Caucasians accounted for about 26% of the student body.

Filipinos appear to be the fastest growing group. While they accounted for only 8.1% of the student body in 1970, they comprise 16.3% of the total by the spring of 1976. This represents over a 100% increase. The proportion of Hawaiians continued to remain relatively constant and relatively small. About 1 in 10 students reported that they were of this ethnic heritage. A large number of groups were represented. The data on mother's and father's ethnic heritage tended to confirm the validity of the respondent's identification of their ethnic make up (refer to Tables 6 and 7). These data proved once again that the Leeward student body is truly cosmopolitan.

About two out of every five students listed an occupation for their father as one which could be coded as "white collar." Census criteria were used for assignment (refer to Table 8). The modal response was "craftsman." This category was marked in 15.8% of the cases where registrants responded to the query. Clearly, the majority of the student population come from families where the chief bread winner is employed in a blue-collar occupation. The pattern indicated in their registration preferences suggests a general desire for upward social mobility and a preference for "white collar" types of work.

The other criterion used to assess social status was father's education. Over one in five students reported that they were from families where father had no formal eudcation beyond elementary school (refer to Table 9). An additional

TABLE 4

SUMMARY OF RESPONDENTS
BY ETHNIC HERITAGE

Ethnic Group	N	%
Not Given	161	5.3
American Indian	20	0.7
Black or Afro-American	41	1.3
Caucasian	793	25.9
Chinese	176	5.7
Filipino	500	16.3
Hawaiian	278	9.1
Indian	3	0.1
Japanese	920	30.0
Korean	39	1.3
Portuguese	28	0.9
Puerto Rican	18	0.6
Samoan	32	1.0
Other	53	1.7
Total	3,062	100.0

Source: LCC Office of Institutional Research

TABLE 5

SUMMARY OF ETHNIC CHARACTERISTICS OF
LEEWARD COMMUNITY COLLEGE STUDENTS

Ethnic Extraction	Leeward CC 1970 Study %	U of H 1972 Study %	U of H Fall 1975 %
Black	1.7	0.5	1.4
Caucasian	35.5	24.1	24.2
Chinese	4.6	4.8	5.1
Filipino	8.1	13.4	14.6
Hawaiian or part-Hawaiian	1.5	11.5	11.0
Japanese	36.5	31.7	30.8
Korean	1.3	0.3	1.8
Samoan	0.4	1.0	0.7
Mixed (not Hawaiian)	10.4	9.8	7.8
Other	NA	NA	2.7

Source: 1970 Study - "I am Curious"
1972 Study - UH Student Survey
1975 Study - SBIF, Fall 1975

TABLE 6

SUMMARY OF RESPONDENTS
BY MOTHER'S ETHNIC HERITAGE

Ethnic Group	N	%
Not Given	293	9.6
American Indian	27	0.9
Black or Afro-American	31	1.0
Caucasian	688	22.5
Chinese	194	6.3
Filipino	448	14.6
Hawaiian	228	7.4
Indian	4	0.1
Japanese	960	31.4
Korean	40	1.3
Portuguese	46	1.5
Puerto Rican	22	0.7
Samoan	27	0.9
Other	54	1.8
Total	3,062	100.0

Source: LCC Office of Institutional Research

TABLE 7

SUMMARY OF RESPONDENTS
BY FATHER'S ETHNIC HERITAGE

Ethnic Group	N	%
Not Given	301	9.8
American Indian	27	0.9
Black or Afro-American	37	1.2
Caucasian	781	25.5
Chinese	182	5.9
Filipino	501	16.4
Hawaiian	180	5.9
Indian	4	0.1
Japanese	857	28.0
Korean	37	1.2
Portuguese	47	1.5
Puerto Rican	22	0.7
Samoan	29	0.9
Other	57	1.9
Total	3,062	100.0

Source: LCC Office of Institutional Research

TABLE 8

SUMMARY OF RESPONDENTS
BY FATHER'S OCCUPATION

Occupational Category	N	%
Not Given	496	16.2
Professional	284	9.3
Managerial	280	9.1
Sales	107	3.5
Clerical	109	3.6
Office Equipment Operator	28	0.9
Military	256	8.4
Craftsman	485	15.8
Construction Worker	84	2.7
Transport Operator	57	1.9
Agricultural Worker	178	5.8
Agricultural Supervisor	52	1.7
Construction Supervisor	94	3.1
Shipping	81	2.6
Services	260	8.5
Domestic	20	0.7
Other	191	6.2
Total	3,062	100.0

Source: LCC Office of Institutional Research

TABLE 9

SUMMARY OF RESPONDENTS
BY FATHER'S HIGHEST
LEVEL OF EDUCATIONAL ATTAINMENT

Educational Level	N	%
Not Given	288	9.4
Doctorate	55	1.8
Master's	120	3.9
Bachelor's	188	6.1
Associate	103	3.4
Some College	248	8.1
High School Diploma	954	31.2
Some High School	387	12.6
Elementary	625	20.4
None	94	3.1
Total	3,062	100.0

Source: LCC Office of Institutional Research

12.6% of the respondents had fathers who had only experienced "some high school." A high school diploma was the highest education attainment of fathers for 31.2% of the students answering the questionnaire. Slightly over 10% had fathers who had completed a baccalauerate degree. These data would tend to suggest that our student body comes from backgrounds where education was and is a luxury.

Students were questioned as to the approximate income of the particular family unit in which they were residing at the time of the study. Almost half of those surveyed reported gross family incomes of less than $15,000 (refer to Table 10). Only 1 in 10 came from a family unit where the aggregate annual income was more than $25,000.

It was also considered important to understand the nature of the social unit in which the students resided. The largest number of respondents reported they lived with "both parents." Thirty-nine percent reported this to be their situation (refer to Table 11). Almost an equal number, accounting for 38.2% of the study population, reported they were married and lived with their spouse. The age of the respondents could probably be correlated with this characteristic. Not surprisingly, only 8.9% reported that they were living by themselves.

As previously mentioned, only about 7% of those who were registered as of the fall semester of that academic year bothered to solicit a degree or certificate of any sort. The percentage was not atypical of that generated by other community colleges in the state. However, the percentage of graduates relative to the entire student population is considered an important indicator of organizational effectiveness by some. Almost one in three students claimed they were "not interested" or "didn't care" about a degree or certificate. About two in three did report that this was important (refer to Table 12). However, the data previously reported in Table 1 are probably the more revealing regarding this matter.

TABLE 10

SUMMARY OF RESPONDENTS
BY FAMILY INCOME LEVEL

Income	N	%
Not Given	392	12.8
$0-4,999	156	5.1
$5,000-9,999	433	14.1
$10,000-14,999	861	28.1
$15,000-24,999	909	29.7
$25,000 Up	311	10.2
Total	3,062	100.0

Source: LCC Office of Institutional Research

TABLE 11

SUMMARY OF RESPONDENTS
BY FAMILY GROUPING

Lives with	N	%
Not Given	119	3.9
Both Parents	1,202	39.3
Father Only	33	1.1
Mother Only	146	4.8
Single Independently	272	8.9
Married Independently	1,171	38.2
Other	119	3.9
Total	3,062	100.0

Source: LCC Office of Institutional Research

TABLE 12

SUMMARY OF RESPONDENTS
BY DESIRE TO OBTAIN
COMMUNITY COLLEGE DEGREE

Response to Query	N	%
Not Given	149	4.8
Not Interested	345	11.3
Don't Care	624	20.4
Important	1,944	63.5
Total	3,062	100.0

Source: LCC Office of Institutional Research

TABLE 13

NATIONAL SUMMARY
OF FAMILY INCOME

Income	N	%
$0-4,999	20,505	11.0
$5,000-9,999	21,809	11.7
$10,000-14,999	47,347	25.4
$15,000-24,999	55,922	30.0
$25,000 Up	40,823	21.9
Total	186,406	100.0

Source: "The American Freshman: National Norms for Fall 1975"

The reader will remember that only 17.3% said their principal purpose in attending college was to receive an AA or AS degree.

For certain items, Pearson product moment correlations were computed. While a correlation is not an inferential statistic, it does indicate significant patterns of positive and negative relationship. There was a positive relationship identified between the variable of "income" and "educational objective." In general, the higher the respondent's family income the more likely he or she was to have a comparatively ambitious educational objective. The same pattern emerged in the relationship between income and the importance of obtaining a degree from a community college. Those with higher incomes also tended to aspire to a degree.

There were also significant correlations observed between the variable of "father's education" and those of "educational objective" and the "perceived importance of a community college degree."

Students from families with lower socio-economic characteristics generally tended to evidence lower educational aspirations. No causality is implied, however. It could be argued that families which do not encourage high educational aspirations are likely to have low economic aspirations as well. Or, it could be likewise argued that those respondents with the lower educational aspirations do not aspire because they are discouraged by their economic environment. In any case there is a positive relationship between educational aspiration and socio-economic status indicators.

EDITING AND CORRELATING EXISTING TEST DATA

The development of the master file involved associating the demographic data with test scores and subsequently the SIS files. Reading tests have been given for several years. Several different forms of the Nelson-Denny Reading Test have been used for diagnostic purposes. The test developers report a high degree of reliability among the various alternate forms. The reading test, as well as the ones in mathematics, are administered during orientation week. The math tests are of more recent origin.

In order to increase our ability to interpret the reading scores for the student body as a whole, it was decided to edit and summarize the data. A basic item analysis was also computed along with the various measures of central tendency which are considered useful for assessing test results. This was done from data produced for each semester since 1970. However, the data summaries which emerged were so extensive as to resist complete duplication. However, the scores falling within the first two standard deviations on either side of mean have been reproduced. This is inclusive of 95% of the scores. These have been displayed along with the various measures of central tendency computed as part of Appendix B.

There are two parts to the Reading test, "vocabulary" and "comprehension." Not all students take the test but most do. The resulting diagnostic data are believed to be valuable in predicting success in certain courses. A score of 57 and below is considered to represent a proficiency level below that necessary to do regular college work. A score of 57 represents a reading level at about the 10th grade level.

There are two different kinds of math tests given. A student is administered the "algebra test" if he has had algebra in high school. Those not having

formal instruction in algebra are given an arithmetic test. Both instruments have limited ranges. They were developed by the Math-Science division and are considered to be useful in advising students into various math curricula. A score of 17 or below on the math test is considered justification for advising students to take pre-algebra course work. As part of the master file developmental effort, test scores were correlated with SIS files. Before discussing the analysis used to test the viability and utility of the master file with regards to test data, the method by which the master file was assembled needs to be reviewed.

TECHNICAL CONSIDERATIONS IN THE DEVELOPMENT OF THE MASTER FILE

As previously mentioned the creation of a student master file was for the purpose of developing the capability of collating various data on each student. Such a capability would allow us to run cross-tabulations on various sorts of data which, up to now, have not been possible. The individual files selected for inclusion were: (1) Student Information System (SIS) data, maintained by the University as a regular component of its student records; (2) placement-test scores in math and reading, measured and recorded by the Psychometrist's Office at Leeward; and (3) basic demographic data, not otherwise included in the SIS files.

After the demographic data were collected, the task of collating the information from the three sources began. The first task was to edit the keypunched surveys. A computer program was written in IBM-extended American National Standard (ANS) COBOL to check each variable for valid ranges and obvious keypunch errors. After editing, the valid records were written on disk in 23-byte unblocked format. Corrected edit rejects were later merged into this file in ascending key sequence. The social security number was chosen as the key for all three sources inasmuch as it is used by the University as a student identification code on all pertinent records.

Math and reading placement-test scores were also edited and placed on disk in 80-byte fixed-block format. Six years of test data were available and the coding scheme had changed several times over the interim. This required that code values be rectified where possible and deleted otherwise. Further, since a student may have taken the test several times, the records were sorted into ascending order by year. The earliest occurence of each score was selected in each case. Editing and selection were performed by an ANS-COBOL program and the

sorting was achieved by invocation of the IBM Sort/Merge Utility.

The primary SIS resource used was the Student Personnel History File (SPHF). This particular file is available in two forms. The first is through an on-line data retrieval system, known as the Adaptable Data Base System (ADABAS).

It should be mentioned that Leeward Community College has extensively experimented with the ADABAS system and continues to be one of its largest users in the state. Unfortunately, ADABAS proved to have several shortcomings in terms of developing the particular capability desired here. It lacked currency, there was initially no expedient method of extracting the ADABAS files directly to another machine-readable medium, and, the on-line nature of the System made it prone to telephone transmission errors. As a consequence, the research staff decided to make use of the SPHF master tape to obtain the data required.

The SPHF master tape exists in presorted form on ascending social security numbers. As a consequence, it is acceptable for direct input to the creation of an indexed-sequential file. An ANS-COBOL program was written for this purpose and, in the process of testing it, an error in the COBOL support software was discovered and reported to IBM. That error has since been corrected.

The skeleton master file then consisted of a logical subset of the SPHF master tape in indexed-sequential format. Using the test data file and, subsequently, the demographic data file as sequential inputs, the master file was searched for corresponding keys in random-access mode and the skeleton was filled out from the latter two sources. The completed file contained 6,258 records of 216-bytes each and a blocking factor of 4.

The independent variables selected for exploratory analysis were dichotomized.

For the "t" tests, version 6.01 of the Statistical Package for the Social Sciences (SPSS) was used. A pair of multiple regression analyses were also run, using an SPSS package to determine the relative influence of "father's occupation," "father's education," and "income," taken in combination, upon each of the dependent variables.

All computer programs and analysis were performed on the IBM 370/158 computing system under OS/MVT at the Manoa campus of the University of Hawaii. Principal I/O was performed through the IBM 1130 RJE batch facility at Leeward with minor control, editing, and I/O through the TSO terminal at the Office of Institutional Research, Leeward Community College. All programming and analytical control were developed and implemented by this office.

Appendix E depicts graphically the processing sequence that has emerged for generating an ongoing master file.

TESTING THE UTILITY OF THE MASTER FILE

As reported earlier one of the methods of illustrating the utility of the master file was to assess the "predictor validity" of the diagnostic tests administered during student orientation. By using the master file, empirical data could be used to determine the efficiency of the various diagnostic tests in predicting academic achievement.

Two achievement criteria were employed: "grade point average" and "number of units successfully completed." Appropriate difference of means tests for uncorrelated data were used. The test scores were utilized as potential explanatory variables.

Reading Test

For the purposes of these analyses, the "vocabulary" and "comprehension" scores were aggregated. The Nelson-Denny reading test proved to be a good predictor of grade point average. Students having scores which indicate 11th grade reading levels or higher, produced a grade point average of 3.01 (refer to Table 14). A 3.0 grade point average is indicative of a "B" grade. Students having a 10th grade reading level or lower produced a GPA of 2.76. The difference in the two GPA's was statistically significant. However, the reading test did not prove to be an effective predictor of course completion. Those who had high reading scores had completed an average of 26.5 units and those with low reading scores had completed almost as many. The average for the latter group was 25.3 (refer to Table 15).

Math Tests

The algebra test was also employed as a possible predictor variable with reference to GPA. Those taking the test and scoring well had a GPA of 2.99 (refer to Table 16).

TABLE 14

MEANS, STANDARD DEVIATIONS, AND "t" VALUE FOR HIGH AND LOW GROUPS AS MEASURED BY THE DIAGNOSTIC READING TEST RELATIVE TO GRADE POINT AVERAGE ACHIEVED

High Group	Low Group
N = 2,236	N = 1,765
$\bar{X}$ = 3.01	2.76
S = 0.63	0.63

DF = 3,771

"t" Value = <u>12.49</u>

TABLE 15

MEANS, STANDARD DEVIATIONS, AND "t" VALUE FOR HIGH AND LOW GROUPS AS MEASURED BY THE DIAGNOSTIC READING TEST RELATIVE TO UNITS COMPLETED

High Group	Low Group
N = 2,236	N = 1,765
$\bar{X}$ = 26.52	25.33
S = 20.36	20.64

DF = 3,762

"t" Value = 1.81

*All underlined values are significant at the .01 level or better.

TABLE 16

MEANS, STANDARD DEVIATIONS, AND "t" VALUE FOR HIGH AND LOW GROUPS AS MEASURED BY THE DIAGNOSTIC ALGEBRA TEST RELATIVE TO GRADE POINT AVERAGE ACHIEVED

High Group	Low Group
N = 728	N = 1,530
$\bar{X}$ = 2.99	2.86
S = 0.63	0.65
DF = 1,466	
"t" Value = <u>4.43</u>	

TABLE 17

MEANS, STANDARD DEVIATIONS, AND "t" VALUE FOR HIGH AND LOW GROUPS AS MEASURED BY THE DIAGNOSTIC ALGEBRA TEST RELATIVE TO UNITS COMPLETED

High Group	Low Group
N = 728	N = 1,530
$\bar{X}$ = 23.58	24.02
S = 17.49	17.43
DF = 1,425	
"t" Value = -0.56	

*All underlined values are significant at the .01 level or better.

Those who did less well had a GPA of 2.86. The difference was significant although far less so than the results gained relative to this criterion using the reading test (refer to Table 16). The algebra test did not discriminate among high and low groups when the criterion of units completed was used (refer to Table 17).

The average number of units completed by the low group was actually higher than that completed by the high group. However, the difference between the performance of the two groups could not be considered statistically significant.

The data for the math test were somewhat disappointing. Those with high scores did better than those with low scores relative to GPA (refer to Table 18). However, it was not at a level deemed statistically significant for the purpose of these analyses. The average of the high group was 3.0 and the average for the low was 2.83 (refer to Table 18). No statistically significant difference at the .01 alpha level was identified in the number of units completed (refer to Table 19). Interestingly enough, the average number of units completed for both groups who had taken the math test was comparatively much lower than that for the group that had taken the algebra test. The fact that students had taken algebra in high school evidently is a predictor of their success at the community college. Those in the high group had only completed an average of 11.9 units and those in the low one, 9.8. The difference was not significant.

Socio-Cultural Data

The focus of emphasis was then shifted to the demographic data. The purpose here was twofold. The research staff sought to test and illustrate its ability to associate "other data" gathered on students with that in the SIS files. A second purpose was to ascertain the influence of several non-school variables on achievement. The same performance criteria "grade point average" and "units completed"

TABLE 18

MEANS, STANDARD DEVIATIONS, AND "t" VALUE FOR HIGH AND LOW GROUPS AS MEASURED BY THE DIAGNOSTIC MATH SKILLS TEST RELATIVE TO GRADE POINT AVERAGE ACHIEVED

High Group	Low Group
N = 94	N = 364
$\overline{X}$ = 3.00	2.83
S = 0.64	0.77
DF = 170	
"t" Value = 2.21	

TABLE 19

MEANS, STANDARD DEVIATIONS, AND "t" VALUE FOR HIGH AND LOW GROUPS AS MEASURED BY THE DIAGNOSTIC MATH SKILLS TEST RELATIVE TO UNITS COMPLETED

High Group	Low Group
N = 94	N = 364
$\overline{X}$ = 11.94	9.87
S = 8.14	8.05
DF = 144	
"t" Value = 2.20	

*All underlined values are significant at the .01 level or better.

were employed. Student performance was compared using occupational status of father as a potential explanatory variable. With regards to grade point average achieved, students coming from families having fathers who were employed in white collar occupations had significantly higher grade point averages (refer to Table 20). However, there was no difference between the groups, of a significant nature relative to the criterion of units completed (refer to Table 21). Those students with "white collar" fathers, had completed an average of 26.0 units while those with "blue collar" fathers had generated an average of 26.7 units. "Father's occupation" proved to be a better predictor of academic success than "father's level of educational attainment." Students having fathers with "some college" and those with "no college" had identical grade point averages (refer to Table 22). Both groups were also similar with regards to number of units completed (refer to Table 23). Both had completed an average of about 26 units. Interestingly enough, "income" did not prove to be a significant factor in discriminating between students on either of the two achievement criteria employed (refer to Tables 24 and 25).

To gain additional analytical perspective and further test the viability of the master file, multiple regression analyses were computed using "father's occupation," "father's education" and "family income" as potential explanatory variables. The performance or criterion variables were "grade point average" and "number of units completed." Less than one percent of variance was explained by the independent variables in combination relative to grade point average (refer to Table 26). Of the three possible explanatory variables, "father's occupation" proved to be the most effective explanatory variable. It accounted for about .50% of the variance. The effectiveness of this variable in discriminating between student subgroups is supported by both the multiple regression analysis and the difference of means testing. However, the term "effectiveness" is used here only in a re-

TABLE 20

MEANS, STANDARD DEVIATIONS, AND "t" VALUE
FOR STUDENTS WITH "WHITE COLLAR" AND "BLUE COLLAR" FATHERS
RELATIVE TO GRADE POINT AVERAGE ACHIEVED

White Collar	Blue Collar
N = 526	N = 1,207
$\bar{X}$ = 3.09	3.00
S = 0.65	0.62
DF = 964	
"t" Value = <u>-2.59</u>	

TABLE 21

MEANS, STANDARD DEVIATIONS, AND "t" VALUE
FOR STUDENTS WITH "WHITE COLLAR" AND "BLUE COLLAR" FATHERS
RELATIVE TO UNITS COMPLETED

White Collar	Blue Collar
N = 526	N = 1,207
$\bar{X}$ = 26.01	26.70
S = 19.67	20.59
DF = 1,043	
"t" Value = 0.66	

*All underlined values are significant at the .01 level or better.

TABLE 22

MEANS, STANDARD DEVIATIONS, AND "t" VALUE
FOR STUDENTS WITH FATHERS HAVING "SOME COLLEGE" OR "NO COLLEGE"
RELATIVE TO GRADE POINT AVERAGE ACHIEVED

Some College	No College
N = 470	N = 1,410
$\bar{X}$ = 3.04	3.04
S = 0.63	0.63
DF = 797	
"t" Value = 0.06	

TABLE 23

MEANS, STANDARD DEVIATIONS, AND "t" VALUE
FOR STUDENTS WITH FATHERS HAVING "SOME COLLEGE" OR "NO COLLEGE"
RELATIVE TO UNITS COMPLETED

Some College	No College
N = 470	N = 1,410
$\bar{X}$ = 25.40	27.12
S = 19.66	20.23
DF = 825	
"t" Value = 1.64	

*All underlined values are significant at the .01 level or better.

TABLE 24

MEANS, STANDARD DEVIATIONS, AND "t" VALUE
FOR STUDENTS WITH "HIGH MODERATE" AND "LOW MODERATE
AND BELOW" FAMILY INCOMES RELATIVE TO GRADE POINT AVERAGE

High Moderate	Low Moderate and Below
N = 842	N = 979
$\bar{X}$ = 3.08	3.04
S = 0.61	0.63
DF = 1,795	
"t" Value = 1.35	

TABLE 25

MEANS, STANDARD DEVIATIONS, AND "t" VALUE
FOR STUDENTS WITH "HIGH MODERATE" AND "LOW MODERATE
AND BELOW" FAMILY INCOMES RELATIVE TO UNITS COMPLETED

High Moderate	Low Moderate and Below
N = 842	N = 979
$\bar{X}$ = 26.33	27.21
S = 19.80	20.55
DF = 1,796	
"t" Value = -0.93	

*All underlined values are significant at the .01 level or better.

TABLE 26

PERCENTAGE OF VARIANCE IN
GRADE POINT RATIO
EXPLAINED BY THE VARIABLES OF
FATHER'S EDUCATION, FATHER'S OCCUPATION, AND FAMILY INCOME

Variable	Mean	SD	Coefficient	% Explained Variance
Father's education	6.12	1.83	0.004	0.05
Father's occupation	0.27	0.44	0.107	0.50
Family income	3.34	1.00	0.022	0.15
Constant			2.931	

Overall percentage of explained variance = 0.71

Standard error = 0.62 F-Value = 4.07*

Sum of squares = 4.68 Residual df = 1713

* F is significant at the 0.05 level.

lative sense. When "units completed" was utilized as the criterion variable, the overall percentage of explained variance relative to the three predictor variables was only .40% (refer to Table 27). "Father's occupation" produced only negligible variance. It should be noted that the particular statistic employed in this set of analyses is extremely rigorous.

TABLE 27

PERCENTAGE OF VARIANCE IN
UNITS COMPLETED
EXPLAINED BY THE VARIABLES OF
FATHER'S EDUCATION, FATHER'S OCCUPATION, AND FAMILY INCOME

Variable	Mean	SD	Coefficient	% Explained Variance
Father's education	6.12	1.83	0.638	0.38
Father's occupation	0.27	0.44	-0.309	Negligible
Family Income	3.34	1.00	-0.193	0.02
Constant			24.099	

Overall Percentage of explained variance = 0.40

Standard error = 20.18 F-Value = 2.34*

Sum of squares = 2864.30 Residual df = 1713

* F is not significant at the 0.05 level.

SUMMARY AND IMPLICATIONS

Summary

There were three purposes for which this study was conducted. These were to:

1. Collect and summarize data on student characteristics and aspirations not otherwise available.
2. Edit and summarize reading test data collected over the last six years, and
3. Test the feasibility and utility of a master file which would combine student data derived from numerous sources.

All three purposes were realized. Many other insights were also obtained as the result of testing the master file's utility.

A student survey was conducted as part of the exercise. The resulting data were of substantial interest. Comparatively few students claimed they were attending the college for the purpose of occupational training. Less than 20% reported attendance for the purpose of obtaining an A.A. or A.S. degree.

The largest two ethnic groups on campus proved to be Japanese and Caucasians. Filipinos appeared to be the fastest growing group among the student body. Between 1970 and 1976 their percentage of the total enrollment increased over 100%. The college still serves comparatively few people of Hawaiian heritage.

About 3 of every 5 students reported their father's occupation as one which would be classified as "blue collar." Only about 10% of the students claimed their fathers had completed a baccalauerate degree. Very few students came from family units with high or moderately high incomes. Most were either living at home or living with their spouse.

The picture obtained from these data is of a generally ambitious student body of modest means. The average Leeward student does not fit the mold of what has traditionally been considered the typical college student. However, the student body does resemble that which has increasingly been emerging as typical of the community college. Our students are not highly career oriented as such. However, they are characterized by aspirations of a non-specific nature.

Reading achievement test data, dating back to 1970, were edited and summarized. Various measures of central tendency and descriptive statistics were computed. These data and the information gathered in the survey were correlated with the appropriate SIS files to form a master file.

The resulting master file was tested for utility. This was done by evaluating the predictor capability of several explanatory variables against two possible criteria or outcome variables. The two performance variables used were grade point average and total number of credits completed successfully. The analyses provided the staff with information about the utility of various diagnostic tests used during student orientation.

The Nelson Denny Reading Test proved to be the best predictor. Students doing well on the test tended to generate superior grades. The difference in means was highly significant.

The algebra test also discriminated on this criterion but at a less significant level than the reading test.

High levels of discrimination having statistical significance were used in interpreting the results of the difference of mean tests. As a consequence, the math test did not meet the rigorous level posited for evaluation purposes.

It appears to be the least valid of the tests in terms of predicting academic achievement.

Three non-school variables were also tested as possible predictors of academic success. "Father's occupation" emerged as the most important factor. Correlational analyses had demonstrated positive associations between "father's occupation" and the variables of "educational aspiration" and "college degree consciousness." In the "t test analyses" between students with white collar and blue collar fathers the former proved more successful in generating high grade point averages. "Father's education" and "income" did not prove good predictors. In the multiple regression analysis, "father's occupation" also emerged as the most important of the variables explored as predictors.

Interestingly enough, "number of units" completed did not prove to be a very effective outcome measure. This result should be considered in the developing dialogue on program effectiveness measures.

Implications

Considerable technical difficulties were encountered in developing the master file. However, it did prove feasible to combine several disparate types of student records into a single file with the expenditure of an acceptable amount of time, resources, and patience.

It has been assumed that the ADABAS system could be incorporated as part of the master file endeavor. This system theoretically is ideally suited for such purposes. It is essentially a data access system which involves programming involving a relatively low level of technical competence. In the view of the developers, ADABAS is sufficiently simple as to allow any administrator to query the computer regarding institutional data with little technical training. Leeward's experi-

ence proved this to be a mistaken assumption. The system, itself, has proved in general to be far less useful for general management purposes than had been believed. A good degree of psychomotor skill is required to program ADASCRIPT. Most administrators have not addressed themselves to a keyboard of any sort for several years. They make clerical mistakes which require remediation. This usually involves a good deal of time, effort, and patience. At Leeward we have found that it is far more expedient to channel all ADABAS requests through professional and technical personnel who are thoroughly familiar with the "hands on" aspects of data processing. For such "hands on" operations involving the management information system, Leeward has installed a computer terminal in the administrative building.

The systems office personnel were kind enough to provide the college with a "extract capability." This extract capability theoretically allows the institution to retrieve information and manipulate it for statistical and other analytical purposes. Unfortunately, even with these supporting resources, ADABAS proved a disappointment relative to the creation of a master file. The ADABAS file is duplicated from the SIS records as of about the sixth week of the academic term. However, the timeframe regularly varies. As such it is static and becomes dated within a week or two. However, the greatest problem involved software technology. The computer programmer assigned to the Office of Institutional Research has prepared an impressive narrative detailing software failures encountered with the ADABAS system. The systems programmer has been most helpful in attempting to alleviate these difficulties. However, the problems continued and still continue to occur.

To alleviate this situation the Office of Institutional Research solicited and

obtained back-up tapes of the relevant SIS files. It was with this resource that the master file was compiled.

The utility of the master file was amply demonstrated through the various exercises that were employed. Test data and other demographic information were wedded to the extrapolated SIS files to create a master file which would permit various cross tabulations and inferential analyses. This had previously not been practical. As previously mentioned, the Nelson Denny Reading Test and "father's occupation" proved to be useful predictors of academic achievement. Of the two outcome measures employed, grade point average proved to be the most reliable discriminator. The validity of the math test was held to be in some question.

Having proved the feasibility and utility of the master file, the question remained as to how to perpetuate such a mechanism on an on-going basis. The problem involved consists of associating test and other data not provided as part of regular student record keeping form with the appropriate SIS files.

People will only respond to so many questionnaires. The University systems office has largely preempted the field in the area of graduate surveys. The staff's experience during the spring registration revealed the reluctance of persons to provide many types of data about themselves. As the result it was decided that the best opportunity to gather "other" relevant student data is during the orientation process. In the past, a mimeographed form has been used to obtain information. The counselors have used the information during the advising process. However, the counselors report that the form has lost much of its utility from their standpoint. (Refer to Appendix C for the copy of the old form.) However, they have agreed to administer the instrument if revised

during the orientation process and make the data available to the Office of Institutional Research. That office in turn agreed to reorganize the form. This office reorganized, reformated, and typed the new orientation form (refer to Appendix D for a copy of the revised form). The form incorporates test data as well as other information considered important for analytical purposes.

In an analyses of orientation forms administered in the spring of 1975, it was discovered that students were confused about "program."* They frequently reported themselves as transfer students and then checked a vocational-technical program as their area of concentration. One purpose of reorganizing the form was to minimize this evident confusion on the part of the students.

Nearly 70% of the student body at Leeward Community College reports that they are liberal arts majors. This proportion had persisted despite the fact that the college has systematically emphasized vocational-technical programs over the last three years. Many of the students who list themselves as liberal arts majors are not really transfer students. Some are simply interested in taking lower division courses in the area of general education and others are actually enrolled in what can best be described as remediation programs. In order to accurately assess the outcomes effectiveness of the college, it is necessary to discriminate between the actual or realistic aspirations of this amorphous group. In other words, the percentage of four-year college transfers should be computed from a base that is realistic and relevant to the actual population that intends to transfer. The progress of those who are enrolled in courses which are not "postsecondary" in nature should be evaluated as such. And, the criteria for assessing organizational effectiveness of the college relative to

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*Refer to "A Partial Profile of New Students Entering Leeward Community College During the Spring Term of 1975," LCC: August 1975.

students who are simply enrolled in course work because they are curious and interested should be evaluated accordingly.

The new form will be a major input to the perpetual master file. It will also allow us to gather data on the:

1. student's work week
2. prior educational and career experience.
3. reasons for attending this college, and
4. financial benefits received.

The master file feasibility study provided the technology and experience necessary to provide a data bank for institutional analysis. It should provide an on-going mechanism for assessing institutional outcomes and effectiveness.

Appendix A

Survey Instrument
Student Body Profile Study

University of Hawaii

Leeward Community College

STUDENT BODY PROFILE STUDY

From time to time the college finds it desirable and necessary to survey its student body. A good deal of information is collected on a recurrent basis. However, certain types of information cannot be obtained from application forms and other such standard documents. Hence this form. It is voluntary. Its purpose is to develop a selected profile of the student body. This particular type of information helps the college determine if we are eligible for certain kinds of grants or other financial benefits.

It is not necessary to identify yourself on this form. Please report your social security number in the boxes provided below so that the data may be serialized correctly. This will also guarantee that duplicates will not be created by accident. All information will be kept confidential. Mahalo.

Social Security Number

1. EDUCATIONAL OBJECTIVE: Please indicate below your reasons for taking classes at Leeward. Indicate only one reason. If you have more than one reason for taking classes, indicate the one which is most important to you.

   a. ☐ (1) Personal interest. I enjoy learning for its own sake, I am interested in gaining further knowledge about something that interests me, or I want to learn more about different areas.

   b. ☐ (2) Professional improvement. I want to improve the skills which I use in my current job or I want to acquire additional skills which would be helpful to me in my current job.

   c. ☐ (3) Occupational preparation. I am taking courses to gain the knowledge or skills required for my chosen occupation. I am working toward a Certificate of Achievement in a technical or vocational area.

   d. ☐ (4) Associate's degree. I am taking courses to obtain an Associate in Arts or Associate in Science degree.

   e. ☐ (5) Preparation for a bachelor's degree. I am taking courses to prepare for further education at another institution. I intend to transfer my credits sometime in the future.

   f. ☐ (9) Other. (please specify) _____

   _____

2. AREA OF CONCENTRATION: Please indicate below the area in which you plan to take most of your course work while at Leeward. Indicate only one area.

   a. ☐ (1) Arts and Humanities (art, drama, history, literature, music, or philosophy).

   b. ☐ (2) Business Education (office skills or management skills).

   c. ☐ (3) Language Arts (languages, speech, journalism).

   d. ☐ (4) Mathematics and Natural Sciences (biology, chemistry, physics, or math). Do not include computer science or oceanography.

   e. ☐ (5) Social Sciences (American studies, human development, political science, psychology, community services).

   f. ☐ (6) Technical-Vocational (automotive technology, computer science, drafting technology, food services, marine technology, or recreation).

3. ETHNIC BACKGROUND: Please select the ethnic background with which you prefer to be identified. If you prefer to be associated with a group which is not listed, enter the name of that group in the space provided under "Other." Also indicate the background for your mother and father in the appropriate columns. Do not enter "Mixed."

			Self	Mother	Father
a.	(01)	American Indian	( )	( )	( )
b.	(02)	Black or Afro-American	( )	( )	( )
c.	(03)	Caucasian	( )	( )	( )
d.	(04)	Chinese	( )	( )	( )
e.	(05)	Filipino	( )	( )	( )
f.	(06)	Hawaiian or part-Hawaiian	( )	( )	( )
g.	(07)	Indian	( )	( )	( )
h.	(08)	Japanese	( )	( )	( )
i.	(09)	Korean	( )	( )	( )
j.	(10)	Portugese	( )	( )	( )
k.	(11)	Puerto Rican	( )	( )	( )
l.	(12)	Samoan	( )	( )	( )
m.	(99)	Other: (Self) _____			
		(Mother) _____			
		(Father) _____			

4. FATHER'S OCCUPATION: Select your father's usual occupation from the following list. If your father is unemployed, please indicate the occupation he was last in or which he would be in if he were re-employed. If your father is in government service, but not in the military, indicate the occupation which is closest to his job specialty.

a. ☐ (01) Professional or technical occupation (e.g., teacher, scientist)

b. ☐ (02) Manager or administrator (not including agricultural or construction supervisors)

c. ☐ (03) Salesperson

d. ☐ (04) Clerk of office worker (e.g., secretary, bookkeeper)

e. ☐ (05) Office equipment operator (e.g., PBX, data processing equipment)

f. ☐ (06) Military service (both officer and enlisted)

g. ☐ (07) Craftsman (e.g., carpenter, mechanic, electrician)

h. ☐ (08) Construction equipment operator

i. ☐ (09) Transport operator (e.g., taxi, bus, ship or aircraft pilot)

j. ☐ (10) Agricultural worker

k. ☐ (11) Agricultural supervisor

l. ☐ (12) Construction supervisor

m. ☐ (13) Shipping-related tradesman (e.g., stevedore, warehouseman, and ship crewman)

n. ☐ (14) Service-related tradesman (e.g., repairman, recreational services, business or hotel services, personal services)

o. ☐ (15) Private household service worker

p. ☐ (99) Other (please specify) _____

_____

5. FATHER'S EDUCATION: Please indicate your father's highest level of formal education.

a. ☐ (1) Doctor's, or other professional degree (including M.D., Ph.D, LLD, J.D., etc.)

b. ☐ (2) Postgraduate, no degree, Professional Certificate, or Master's

c. ☐ (3) Bachelor's Degree

d. ☐ (4) Associate Degree or Certificate

e. ☐ (5) College, no degree

f. ☐ (6) High school, diploma or equivalent

g. ☐ (7) High school, no diploma or equivalent

h. ☐ (8) Elementary, 8 years or less

i. ☐ (9) None

6. FAMILY INCOME: Please estimate your family's income per year before any taxes or deductions are made.

a. ☐ (1) Less than $ 5,000

b. ☐ (2) $ 5,000 to $ 9,999

c. ☐ (3) $10,000 to $14,999

d. ☐ (4) $15,000 to $24,999

e. ☐ (5) $25,000 or more

7. FAMILY GROUPING: Please indicate which situation below applies to you.

a. ☐ (1) Living with both parents

b. ☐ (2) Living with father only

c. ☐ (3) Living with mother only

d. ☐ (4) Unmarried and living independently

e. ☐ (5) Living with husband (or wife) and children (if any)

f. ☐ (9) Other (please specify) _____

_____

8. IMPORTANCE OF A DEGREE: Please indicate below your feelings about getting a degree or certificate.

a. ☐ (1) I am not interested in getting a degree or certificate at a community college.

b. ☐ (2) A degree or certificate from a community college would be nice but it's not very important.

c. ☐ (3) I want to get a degree or certificate from a community college.

Appendix B

Descriptive Analyses of Test Data

NELSON-DENNY READING TEST
SUMMARY OF VOCABULARY SCORES

Year	N	Mean	Mode	Median	SD	Variance	Range
1970	2971	29.7	28	28.2	13.2	174.6	95
1971	3394	28.1	27	27.2	12.4	152.8	86
1972	2713	28.9	22	27.1	13.6	183.8	93
1973	2172	27.2	24	25.6	12.8	165.1	88
1974	3049	28.4	25	24.8	16.5	273.6	98
1975	2420	27.8	18	25.1	15.7	246.1	97

NELSON-DENNY READING TEST
SUMMARY OF COMPREHENSION SCORES

Year	N	Mean	Mode	Median	SD	Variance	Range
1970	2971	35.8	38	35.4	12.2	147.9	86
1971	3394	32.9	28	32.2	12.2	149.3	86
1972	2706	33.5	34	32.3	12.7	160.8	92
1973	2143	33.5	34	33.7	12.4	153.4	66
1974	3049	33.5	38	33.6	11.9	141.2	68
1975	2421	34.0	34	34	11.4	129.6	64

NELSON-DENNY READING TEST
SUMMARY OF COMPOSITE SCORES

Year	N	Mean	Mode	Median	SD	Variance	Range
1970	2972	65.5	58	63.5	23.6	555.2	177
1971	3393	61.0	56	59.7	22.5	505.1	154
1972	2711	62.6	50	59.5	28.0	787.1	758
1973	2143	60.7	61	60.0	23.6	556.4	152
1974	3050	61.8	58	58.3	26.3	692.5	163
1975	2421	61.8	51	59.1	25.3	639.2	259

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Appendix C

LCC Student Information and
Test Data Inventory

LEEWARD COMMUNITY COLLEGE
STUDENT INFORMATION AND TEST DATA INVENTORY

SOCIAL SECURITY NO. _____ PRINT NAME _____
Last First Initial

MARITAL STATUS ___Single ___Married ___Divorced ___Widowed TODAY'S DATE _____ AGE _____

* * * \

8. *How many courses do you plan to take this coming semester?*

___ A. Full time (4 or more courses)
___ B. Part time (fewer than 4 courses)
___ C. Undecided

9. *Are you entering this institution directly from high school?*

___ A. Yes, just graduated from high school
___ B. No, still in high school
___ C. No, transferred here from another institution
___ D. Have been in the armed forces most of the time since leaving high school
___ E. Worked for 1 or 2 years after leaving high school
___ F. Worked for 3 or more years after leaving high school
___ G. Other; specify:_____

_____

10. *Why did you decide to attend college at this time? (Indicate one, two, or three reasons, putting a "1" next to the most important reason, a "2" next to the second most important, and a "3" next to the third.)*

___ A. Did not want to work right now
___ B. Couldn't get a job
___ C. Wanted to collect GI bill
___ D. Friends were going to college
___ E. Parents (wife or husband) wanted you to go
___ F. High school counselor or teachers urged you to go
___ G. Wanted to earn a degree or study a specific subject
___ H. Wanted to go to college, for no particular reason
___ I. Wanted to prepare for a better paying job
___ J. Other reasons:_____

_____

11. *Why did you decide to enroll at LCC rather than another college? (Select the two most important reasons by placing a "1" next to the most significant reason and a "2" next to the second most important.)*

___ A. High school counselor or teacher recommend LCC
___ B. Parents (husband or wife) wanted you to attend LCC
___ C. Friends attend LCC
___ D. Low tuition
___ E. Small classes
___ F. Nearness to home or work
___ G. Courses/programs you wanted
___ H. General academic reputation
___ I. Not accepted by first choice college
___ J. Other; specify:_____

_____

12. *Are you eligible to attend Mason or another 4-year college?*

___ A. Did not apply; probably eligible
___ B. Did not apply; probably not eligible
___ C. Applied, but not accepted
___ D. Question not applicable; courses or program you want not offered there
___ E. Applied; accepted

QUESTIONS 13-15. *How important is finishing your education to you, your parents (wife or husband) and your closest friends?*

13. Important to you

___ A. Very
___ B. Somewhat
___ C. Not very
___ D. Not at all

14. Important to your parents (wife or husband)

___ A. Very
___ B. Somewhat
___ C. Not very
___ D. Not at all

15. Closest friends

___ A. Very
___ B. Somewhat
___ C. Not very
___ D. Not at all

16. *Do you expect to receive state or federal benefits this semester?*

___ A. No
___ B. VA benefits
___ C. Social Security benefits
___ D. State scholarship
___ E. State loan
___ F. Unsure if qualify for financial assistance
___ G. Qualify but not receiving assistance
___ H. Other; specify:_____

17. *Do you need assistance in any of the following areas? (Check as many as applicable.)*

___ A. Special help to increase reading speed or comprehension
___ B. Special help in math
___ C. Special help in developing writing skills
___ D. Help in developing better study techniques
___ E. Help in finding part-time or full-time employment
___ F. Financial aid (scholarships, loans, etc.)
___ G. Counseling and testing about educational and vocational plans
___ H. Counseling about personal problems.

Appendix D

LCC Orientation Inventory

UNIVERSITY OF HAWAII
Leeward Community College
Orientation Inventory

_____
today's date

PART I: IDENTIFICATION AND TEST DATA

Directions: Fill in the boxes and blank spaces as required. The test data will be entered later.

1. Name: _____
(please print) last first initial

2. Social Security No. ☐☐☐ ☐☐ ☐☐☐☐

3. Marital Status: ☐ a. single ☐ b. married ☐ c. divorced ☐ d. widowed

4. Age: ☐☐

5. Semester: ☐ a. fall ☐ b. spring ☐ c. summer 6. Year: ☐☐

PART II: TEST DATA *(leave blank at this time)*

Nelson-Denny Reading Test

1. Form ☐
2. Vocabulary ☐☐
3. Comprehension ☐☐
4. Total ☐☐☐
5. Developmental Skills Advisement

☐ a. yes ☐ b. no

Mathematics Diagnostic Test

1. Prior Algebra Instruction

☐ a. 2 years or more ☐ b. some ☐ c. none

2. Math Placement Test I

Arithmetic ☐☐ Basic Algebra ☐☐

3. Math Placement Test II

(Advanced Algebra) ☐☐

4. Developmental Skills Advisement

☐ a. yes ☐ b. no

PART III: PROGRAM INTENTIONS

Directions: We realize that you may not be entirely clear as to what basic program you want to be involved in at Leeward. This is understandable. However, for statistical and advisement purposes, we need some idea of your inclination. For our purposes here, there are three basic program alternatives: vocational-technical-occupational, general education, and liberal arts transfer. Even if you are undecided, respond to the questions in only one of the program boxes.

Program Alternative No. 1

Vocational-Technical-Occupational: If you are planning to take course work to enter vocational-technical-occupational program, respond to the items in this box.

1. Which one of the programs are you planning to pursue?

- ☐ a. Accounting
- ☐ b. Automotive Technology
- ☐ c. Computer Science
- ☐ d. Drafting Technology
- ☐ e. Food Service
- ☐ f. Graphic Arts
- ☐ g. Library Technology
- ☐ h. Maintenance Technology
- ☐ i. Management
- ☐ j. Marine Technology
- ☐ k. Recreation Instructor Program
- ☐ l. Secretarial Science
- ☐ m. Undecided, but definitely Voc-Tech area.

2. Is your training for a regular job which you hope to make a permanent career?

☐ a. yes ☐ b. no

3. Is your training for the purpose of changing careers?

☐ a. yes ☐ b. no

Program Alternative No. 2

General Education Program: Provide information in this box if you plan to take general course work either in the liberal arts and occupational areas but do not anticipate transferring to a four-year college or completing a vocational program. A community college degree might possibly be an expectation of such an educational plan. However, your program might not conceivably involve any consideration of a degree. If you are enrolling primarily to enrich your background of experience or to update yourself in your profession you might respond here.

- ☐ a. I am taking classes for pleasure and intellectual stimulation.
- ☐ b. I might transfer.
- ☐ c. I might enter an occupational program.
- ☐ d. I am taking courses for professional improvement.
- ☐ e. I am taking course work primarily to increase my skills in reading, writing, and/or math.
- ☐ f. Undetermined.

Program Alternative No. 3

Liberal Arts/Transfer Program: The general plan of classwork is similar to that of the first two years at a four-year college or university. It is designed to lead to the ultimate transfer to such an institution and the completion of a degree at a four-year college.

1. Academic 'discipline' or 'subject' where greatest course work is ultimately anticipated (e.g., history, biology, English). List only one or check the box marked 'undetermined.'

   a. My major subject is: _____
   b. ☐ undetermined

2. Where do you plan to transfer?

   ☐ a. University of Hawaii, Manoa
   ☐ b. West Oahu College
   ☐ c. private college in Hawaii
   ☐ d. mainland college
   ☐ e. other (please specify) _____

3. Are you eligible for admission to the University of Hawaii at Manoa or another institution with comparable admission standards at this time?

   ☐ a. yes, applied and was accepted.
   ☐ b. yes, probably eligible but didn't apply.
   ☐ c. no, applied and was rejected.
   ☐ d. no, probably not eligible and didn't apply.

PART IV: GENERAL INFORMATION

By completing this section of the orientation form, you will help us gain necessary information to better understand our everchanging student body. It will also allow the counselor to which you're assigned to better understand you.

1. On the average, how many hours per week do you plan to work in a job this coming semester?

   ☐ a. don't plan to work
   ☐ b. less than 6 hours
   ☐ c. 6 to 20 hours
   ☐ d. 21 to 30 hours
   ☐ e. 31 to 40 hours
   ☐ f. 41 hours or more

2. Do you plan to attend full-time or part-time this coming semester?

   ☐ a. full-time (12 units or more)
   ☐ b. part-time (11 units or less)
   ☐ c. undecided

3. What did you do immediately prior to attending Leeward?

- ☐ a. attended high school and just graduated
- ☐ b. attended high school and still do
- ☐ c. attended another community college
- ☐ d. attended a four-year college or university
- ☐ e. was a member of the armed forces
- ☐ f. was a member of the armed forces and still am
- ☐ g. was employed in a full-time position and left
- ☐ h. was employed in a full-time position and still am
- ☐ i. other (please specify) _____

4. Why did you decide to enroll at LCC rather than another college? (Select the two most important reasons by placing a '1' next to the most significant reason and a '2' next to the second most important.)

- ☐ a. high school counselor or teacher recommended LCC
- ☐ b. family wanted me to attend LCC
- ☐ c. friends attend LCC
- ☐ d. low tuition
- ☐ e. small classes
- ☐ f. nearness to home or work
- ☐ g. desired courses/programs offered here
- ☐ h. general academic reputation
- ☐ i. not accepted by first choice college
- ☐ j. other (please specify) _____

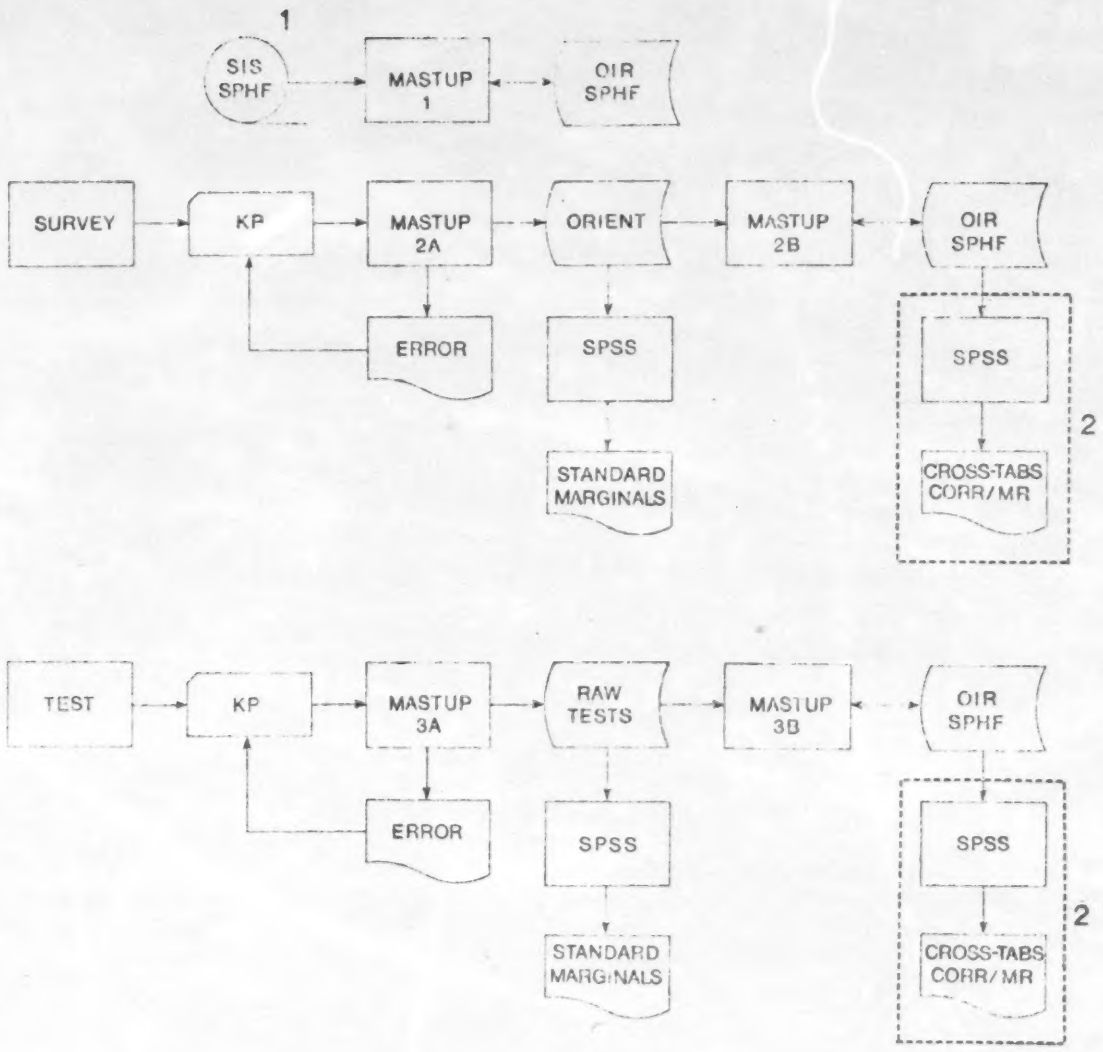
5. Have you applied for state or federal benefits this semester?

- ☐ a. no
- ☐ b. VA benefits
- ☐ c. social security benefits
- ☐ d. state scholarship
- ☐ e. state loan
- ☐ f. unsure if qualify for financial assistance
- ☐ g. qualify, but not receiving assistance
- ☐ h. other (please specify) _____

Appendix E

Master File Assembly Sequence

MASTERFILE UPDATE CYCLE



NOTES 1. 6-WEEK SEMESTER UPDATE

2. OPTIONAL PROCESS

JEFFREY A. LOW, INSTITUTIONAL RESEARCH, LCC

UNIVERSITY OF CALIF.
LOS ANGELES

SEP 17 1976

CLEARINGHOUSE FOR
JUNIOR COLLEGES